

CLAIMS

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1. A computing device for receiving notification of a new incoming message at a message server and for retrieving the message from the message server, the computing device including a communications device for coupling with a communications line, the communications line being coupled to a communications system, the communications system in turn being coupled to the message server, the communications device implementing an on-hook signaling protocol for receiving data sent when the communications line is on-hook, the received data including the notification of the new incoming message.

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2. The computing device of claim 1 wherein the incoming message is an e-mail message and the message server is an e-mail server.

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3. The computing device of claim 1 wherein in response to the notification of the new incoming message, the computing device employs the communications device thereof, the communications line, and the communications network to contact the message server and retrieve the new incoming message from such message server.

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4. The computing device of claim 1 wherein in response to the notification of the new incoming message, the computing device annunciates that the new incoming e-mail message is awaiting retrieval.

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5. The computing device of claim 1 comprising an e-mail appliance.

6. The computing device of claim 1 wherein the communications device is a modem.

7. The computing device of claim 1 wherein the communications device receives data sent according to a Bell 202 modem signaling protocol.

8. The computing device of claim 1 wherein the communications device implements an Analog Display Services Interface (ADSI) protocol for receiving data sent when the communications line is on-hook.

9. A method in combination with a computing device for retrieving a message from a message server, the computing device including a communications device for coupling with a communications line, the communications line being coupled to a communications system, the communications system in turn being coupled to the message server, the method for receiving notification of a new incoming message at the message server, the method comprising:

implementing, by the communications device, an on-hook signaling protocol for receiving data sent when the communications line is on-hook, the received data including the notification of the new incoming message; and
awaiting, by the computing device, the notification of the new incoming message as received according to the on-hook signaling protocol.

10. The method of claim 9 wherein the incoming message is an e-mail message and the message server is an e-mail server, the method comprising:

implementing, by the communications device, an on-hook signaling protocol for receiving data sent when the communications line is on-hook, the received data including the notification of the new incoming e-mail

message; and

awaiting, by the computing device, the notification of the new incoming e-mail message as received according to the on-hook signaling protocol.

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11. The method of claim 9 further comprising, in response to the notification of the new incoming message:

contacting the message server by way of the communications device, the communications line, and the communications network; and retrieving the new incoming message from such message

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server.

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12. The method of claim 9 further comprising, in response to the notification of the new incoming message, annunciating that the new incoming e-mail message is awaiting retrieval.

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13. The method of claim 9 wherein the communications device is a modem, the method comprising implementing, by the modem, an on-hook signaling protocol for receiving data sent when the communications line is on-hook.

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14. The method of claim 9 comprising implementing, by the communications device, an on-hook signaling protocol for receiving data sent according to a Bell 202 modem signaling protocol.

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15. The method of claim 9 comprising implementing, by the communications device, an Analog Display Services Interface (ADSI) protocol for receiving data sent when the communications line is on-hook.

16. A system for notifying a computing device of an incoming message, the system comprising:

a message server coupled to a data communications network for receiving the incoming message;

a public communications system coupled to the message server, the message server for securely communicating to the communications system that the incoming message awaits retrieval by the computing device; and

a communications line coupled to the communications system and to the computing device, the communications system for signaling the computing device over the communications line that the incoming message awaits retrieval by such computing device.

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17. The system of claim 16 wherein the communications system signals the computing device over the communications line according to an on-hook signaling protocol.

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18. The system of claim 17 wherein the communications system signals the computing device over the communications line according to a Bell 202 modem signaling protocol.

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19. The system of claim 16 wherein the incoming message includes a destination address associated with the computing device, and wherein the communications line is identified by an identifier, the system further comprising a database associating the destination address with the identifier, the message server accessing the database and determining the identifier based on the destination address and communicating to the communications system that the incoming message awaits retrieval by the computing device at the communications line as identified by the identifier.

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20. The system of claim 19 wherein the communications system includes at least a portion of a public switched telephone network (PSTN), wherein the communications line is a telephone line, and wherein the identifier is a

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telephone number.

21. The system of claim 16 wherein the communications system includes a secure server and wherein the message server communicates with the secure server of the communications system in an encrypted manner according to a secret shared therebetween.

22. The system of claim 16 wherein the message server is coupled to a data / control network of the communications system.

23. The system of claim 22 wherein the communications system includes at least a portion of a public switched telephone network (PSTN) which in turn includes at least a portion of an SS7 network, and wherein the message server is coupled to the SS7 network.

24. The system of claim 16 wherein the incoming message is an e-mail message and the message server is an e-mail server.

25. The system of claim 16 wherein the communications system includes at least a portion of a public switched telephone network (PSTN).

26. The system of claim 25 wherein the communications system includes a central office for controlling the communications line.

27. The system of claim 26 wherein the communications line is a telephone line.

28. The system of claim 27 wherein the central office places a dial tone on the telephone line when such telephone line is off-hook, and wherein the communications system signals the computing device over the telephone line

that the incoming message awaits retrieval by placing a recognizable dial tone on the telephone line different than a regular dial tone, whereby the computing device periodically causes the telephone line to go off-hook and listens for the recognizable dial tone.

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29. The system of claim 16 wherein the message server is coupled to an Internet data communications network for receiving the incoming message.

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30. A method for notifying a computing device of an incoming message, the method comprising:

receiving the incoming message at a message server coupled to a data communications network;

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communicating to a communications system coupled to the message server that the incoming message awaits retrieval by the computing device; and

signaling the computing device over a communications line coupled to the communications system and to the computing device that the incoming message awaits retrieval by such computing device.

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31. The method of claim 30 comprising signaling the computing device over the communications line according to an on-hook signaling protocol.

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32. The method of claim 31 comprising signaling the computing device over the communications line according to a Bell 202 modem signaling protocol.

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33. The method of claim 30 wherein the incoming message includes a destination address associated with the computing device, and wherein the communications line is identified by an identifier, the method further

comprising:

associating the destination address with the identifier in a database; and

accessing, by the message server, the database to determine the identifier based on the destination address;

the method comprising communicating to the communications system that the incoming message awaits retrieval by the computing device at the communications line as identified by the identifier.

34. The method of claim 33 wherein the communications system includes at least a portion of a public switched telephone network (PSTN), wherein the communications line is a telephone line, and wherein the identifier is a telephone number, the method comprising:

associating the destination address with the telephone number in the database;

accessing, by the message server, the database to determine the telephone number based on the destination address; and

communicating to the communications system that the incoming message awaits retrieval by the computing device at the communications line as identified by the telephone number.

35. The method of claim 30 wherein the communications system includes a secure server, the method comprising communicating to the secure server of the communications system coupled to the message server in an encrypted manner according to a secret shared between the message server and the secure server.

36. The method of claim 30 comprising communicating to the communications system over a data / control network thereof that the incoming message awaits retrieval by the computing device.

37. The method of claim 36 wherein the communications system includes at least a portion of a public switched telephone network (PSTN) which in turn includes at least a portion of an SS7 network, the method comprising
5 communicating to the PSTN over the SS7 network thereof that the incoming message awaits retrieval by the computing device.

38. The method of claim 30 wherein the incoming message is an e-mail message and the message server is an e-mail server, the method
10 comprising:

receiving the incoming e-mail message at the e-mail server;
communicating to the communications system that the incoming e-mail message awaits retrieval by the computing device; and
15 signaling the computing device that the incoming e-mail message awaits retrieval by such computing device.

39. The method of claim 30 wherein the communications system includes at least a portion of a public switched telephone network (PSTN), the method comprising communicating to the PSTN that the incoming message
20 awaits retrieval by the computing device.

40. The method of claim 39 wherein the PSTN includes a central office for controlling the communications line, the method comprising communicating to the central office that the incoming message awaits retrieval by
25 the computing device.

41. The method of claim 40 wherein the communications line is a telephone line, the method comprising signaling the computing device over the telephone line that the incoming message awaits retrieval by such computing
30 device.

42. The method of claim 41 wherein the central office places a dial tone on the telephone line when such telephone line is off-hook, the method comprising signaling the computing device over the telephone line that the incoming message awaits retrieval by placing a recognizable dial tone on the telephone line different than a regular dial tone, whereby the computing device periodically causes the telephone line to go off-hook and listens for the recognizable dial tone.

43. The method of claim 30 comprising receiving the incoming message at a message server coupled to an Internet data communications network.